Warm Up

Solve and check the equation shown below.

$$5(3+k)=45$$

$5(3)+5(k)$

$15+5k=45$

$-15 \quad -15$

$\frac{5k}{5}=\frac{30}{5}$

$k=6$

Division Property of Equality

Distributive

Subtraction Property of Equality

Simplifying Expressions w/ Like-Terms

With a partner or a small group, complete the section below...

What makes like-terms?	Create some like-terms for each expression below.	Practice combining the like-terms.
exact same variable(s) w/ exact same exponent	a) $-4xy$ 7xy	a) $2x-4y+3z+17y$ 2x+13y+3z
	b) $2z^3$ $3z^3$ $9z^3$ $24\frac{3}{2}$	b) $4x^2+4x-2+3x-5x^2-10$ $-4x^2+7x-12$
	c) $-3x$ 7x 4x	c) $-2ab+4a-7b-5ab$ 4a-7b-7ab

Commutative → -7ab+4a-7b

Solving Equations that require Combining Like-Terms

...now if our equations have like-terms...

$2x + 3 - 4x - 9 = -62$

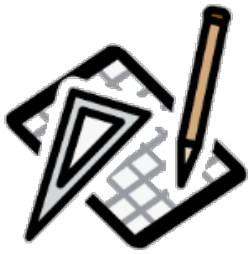
$-2x - 6 = -62$

$+6 \quad +6$

$\frac{-2x}{-2} = \frac{-56}{-2}$

$x = 28$

1. rearrange to group like-terms (commutative property)
2. combine like-terms
3. solve like a two-step equation



$$3x - 4 - 5x + 7 = 17$$

Step 1 Distribute → **Step 2** Combine like terms → **Step 3** Solve by undoing in reverse. → **Step 4** Check

$-5x-2(-3x-4)=-4$

$-5x+6x+8=-4$

$x+8=-4$

$-8 \quad -8$

$x=-12$

$132=-6x+3(-3x+9)$

$132=-6x-9x+27$

$132=-15x+27$

$-27 \quad -27$

$105=-15x$

$\frac{105}{-15}=\frac{-15x}{-15}$

$-7=x$

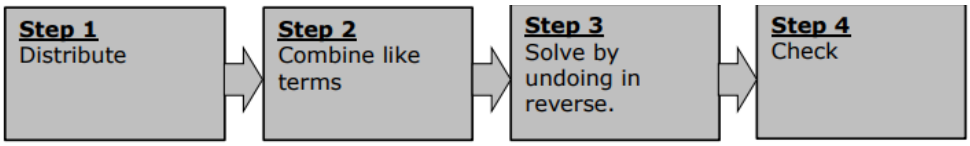
We/You Do

$10x - 6(2x + 5) = 20$

$\frac{1}{2}(10x - 2) + 3x = -25$

Translate, then solve:

"Five times the difference of twice a number and three, decreased by the sum of the number and eight, equals 13"



HOMEWORK!!! Solve and check each equation below.

1) $-12 = 3x - 2(3x + 15)$

2) $-4x + 5(-4x + 13) = -175$